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SUSTAINABLE DIETARY PATTERNS AND NUTRITIONAL STATUS OF PATIENTS WITH SCHIZOPHRENIA

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Abstract
Schizophrenia is a long-term mental disorder that causes problems with thinking, perception, and behavior. It often comes with unhealthy lifestyle habits that worsen physical health issues. Nutrition is crucial for influencing the overall health and recovery of people with schizophrenia. This study aimed to look at the eating habits of schizophrenia patients, examine their link to nutritional status, and find out what behavioral and lifestyle factors affect food choices. The research also intended to offer dietary advice to improve quality of life. A cross-sectional study involved 50 schizophrenia patients at SreeBalaji Medical College and Hospital in Chennai, using purposive sampling. Data collection included details about demographics, body measurements, clinical and psychological assessments, and dietary evaluation through a 24-hour recall and food frequency questionnaire. The findings were analyzed using basic and inferential statistics. Results revealed that 58% of respondents were overweight, and 52% had high waist-to-hip ratios. Their diet mainly consisted of junk and spicy foods, with low intake of fruits and vegetables. These unhealthy habits were linked to irregular meal times, poor sleep, and aggressive behavior. A significant relationship was found between BMI and fruit/vegetable intake. The study shows that schizophrenia patients often have poor eating habits, increasing their risk of metabolic issues. Nutrition education that encourages balanced diets, along with medical treatment, is found to be important for improving their recovery and well-being.

Keywords: Schizophrenia, Mental health and Nutrition, Metabolic risks, Junk foods, Dietary choices.

Introduction

Schizophrenia is a severe mental disorder marked by distorted thinking, perception, and emotional responsiveness that significantly affect social and occupational functioning. Recognized by the World Health Organization as one of the top ten disorders contributing to the global disease burden, it has been a subject of major clinical and epidemiological research since the late 1960s. Historically, schizophrenia was considered primarily a psychotic disorder, but research now views it as a neuro development condition influenced by cognitive and negative symptoms. Globally, schizophrenia affects approximately 24 million people, or one in every 300 individuals, making it a major public health challenge. In India, an estimated 1.1 billion people are affected, with increasing prevalence among women due to family stress, social pressures, and lifestyle factors. In Tamil Nadu, studies reveal a growing concern, especially among homemakers and working women, highlighting the regional impact of psychosocial and nutritional determinants.

Government initiatives at both national and international level play a vital role in addressing the alarming rise of schizophrenia. The World Health Organization's Quality Rights Project and India's National Mental Health Programme focus on promoting community-based rehabilitation, reducing stigma, and integrating mental health into primary care. Tamil Nadu's district mental health programs and awareness campaigns further strengthen these efforts. Factors influencing schizophrenia include genetic predisposition, stress, poor diet, and lack of social support. Nutritional deficiencies—

especially in vitamins, omega-3 fatty acids, and trace elements—are found to worsen symptoms and metabolic complications. Addressing these factors requires a holistic approach that includes early diagnosis, balanced nutrition, community involvement, and sustained psycho education. Enhancing awareness, integrating mental and physical health services, and improving dietary practices can collectively improve quality of life and promote recovery among individuals with schizophrenia.

Review Of Literature

Schizophrenia is a chronic mental disorder that affects a person's ability to think, feel, and behave clearly. According to the World Health Organization (1979), schizophrenia is an international follow-up study of chronicity in mental illness and remains one of the most disabling psychiatric conditions. Globally, schizophrenia affects around 1% of the population (Saha et al., 2005), while in India, the condition is increasing due to changing lifestyles, stress, and poor dietary habits (McGrath et al., 2008). It manifests through hallucinations, delusions, and social withdrawal, often leading to long-term cognitive and emotional impairment (Jablensky et al., 1992). The disorder usually develops in early adulthood and is influenced by both genetic and environmental factors, including perinatal complications, infections, and psychosocial stressors (Coyle, 2006).

Nutritional deficiencies play a significant role in the onset and progression of schizophrenia. (Peet et al. 2004) and (S. Mitra& R. Natarajan 2017) indicated that inadequate intake of vitamins, minerals, and omega-3 fatty acids may exacerbate cognitive dysfunction and emotional instability. Studies also revealed that patients often exhibit poor dietary patterns, low fruit and vegetable consumption, and metabolic disorders resulting from antipsychotic medication (Watts, 2012 & Abraham et al., 2003).Westman (2009) discussed the relationship between gluten intolerance and schizophrenia, highlighting how dietary interventions such as ketogenic or low-carbohydrate diets can influence symptom management. The relationship between nutrition and mental health, therefore, holds a key position in understanding recovery outcomes.

Clinical and psychosocial research emphasizes that early intervention and holistic management contribute significantly to improving patients' quality of life. Barnes (2007) and Kissling (2003)reported that antipsychotic medication combined with psychosocial therapies helps reduce relapse and improve functioning. However, noncompliance and nutritional neglect remain barriers to effective recovery. (Trivedi et al. 2016) highlighted decreased brain levels of vitamin B12 in patients with schizophrenia, confirming the biochemical link between nutrition and psychiatric health. Integrating nutritional care, psychotherapy, and community support systems can therefore lead to a more sustainable recovery pathway (Patel &Chatterji, 2015).

Methodology

The study entitled was carried out to determine the dietary patterns of the patients suffering from schizophrenia and the effect of nutrition in improving their health condition. The researcher has used descriptive research design as it provides wide scope to bring in various concepts needed for the research. The researcher is specific about choosing Sree Balaji Medical College and Hospitals, Chromepet, Chennai which has a psychiatric ward with sufficient in-patient cases of schizophrenia. Total of 50 samples diagnosed with schizophrenia were selected for the study. Purposive sampling combined with convenience sampling method is adopted for the study. Patients with schizophrenia were both men and women aged 18–75 years. A written informed consent was obtained from all participants who fulfilled the selection criteria. Socio-demographic and clinical profiles, were obtained

from patients and their caregivers, along with available medical records. Assessment of biophysical parameters was done as per the guidelines of Cardiovascular Survey Methods of WHO 3rd Edition. Dietary habits and psychological behaviors of the samples were also studied. Both primary and secondary data were used for data collection and primary data were collected by well-structured questionnaire. The researcher ensured privacy and confidentiality throughout the process

Statistical Analysis

The collected data were systematically tabulated and analyzed using descriptive statistical methods such as percent analysis and correlation techniques to identify associations between nutritional status, psychological behavior and socio-demographic variables of the Respondents.

Results and Discussion

Table 1: Showing Socio-Demographic Profile of the Respondents

Variables	Number of Respondents=50	Percent
AGE		
18 – 30	15	30
30 – 45	19	38
45 – 65	15	30
65 – 75	1	2
Gender		
Male	23	46
Female	27	54
Marital Status		
Married	28	56
Unmarried	16	32
Divorce	6	12
Family Type		
Nuclear	31	62
Joint	19	38

Source-Primary Data

Table 4.1 indicates that 30% of the participants were between 18–30 years, 38% fell within the 30–45-year range, another 30% were aged 45–65 years, and only 2% belonged to the 65–75-year group. This distribution reflects the broad age span affected by the condition. Existing evidence shows that individuals with a family history of schizophrenia have an elevated risk of developing schizophrenia, mood disorders, or delusional disorders, with both genetic predisposition and environmental influences contributing equally to the overall variability of the disorder **(Chou IJ et al., 2017).**

Gender distribution shows that 54% of the respondents were female and 46% were male. With regard to marital status, 56% were married, 32% unmarried, and 12% divorced. Previous studies highlight that individuals with schizophrenia frequently experience marital disruption, supporting the present findings that schizophrenia is highly prevalent among separated or divorced individuals **(Mishra et al., 2024)**. Additionally, 62% of the participants belonged to nuclear families, while 38% were part of joint family systems, indicating a higher representation from nuclear households.

Table 2 showing the Body mass index of the Respondents

Variables	Number of Respondents=50	Percent
BMI		
Overweight	29	58
Normal	19	38
Underweight	2	4
WAIST HIP RATIO		
High risk	25	50
Moderate	18	36
Low risk	7	14

Source-Primary Data

Table 2 indicates that 58% of the participants were classified as overweight, 38% fell within the normal weight range, and 4% were underweight. Assessment of waist–hip ratio revealed that 50% of the respondents were at high risk, 36% exhibited moderate risk, and 14% were categorized as having low risk. These findings align with existing evidence showing that individuals with schizophrenia have a higher prospect of being overweight or obese and are consequently more prone to metabolic complications such as hypertension and type 2 diabetes **(Henderson et al., 2006).**

Table 3 Showing the Past Psycho History of the Respondents

Variables	Number of Respondents=50	Percent
Family Psycho History		
Mother side	10	20
Father side	10	20
NIL	30	60
Interactive Status		
High	14	28
Less	24	48
Normal	12	24

Source-Primary Data

(Sahas S. et al. 2006) reported that genetic factors contribute considerably to the phenotypic variability of schizophrenia, while shared environmental influences play a moderate role, and non-shared environmental factors like childhood trauma and abuse, later-life stressful events, substance use, and migration account for additional variation. In the present study, 60% of participants reported no family history of psychiatric illness, whereas 20% indicated a maternal history and another 20% reported a paternal history. With regard to social interaction, 48% of the respondent's demonstrated low levels of engagement with the general public, 28% showed high levels of interaction, and 24% exhibited moderate interaction patterns.

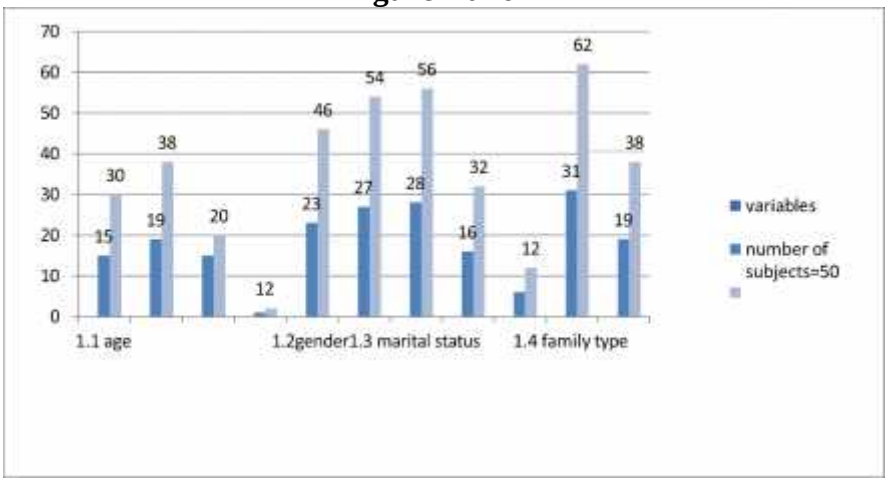
Table 4 Showing the Clinical Findings of the Data

Medications		
Sizodon	26	52
Zapiz	11	22
Neurobion forte	5	10
Chlorpromazine	3	6
Pacitane	15	30
Current Ongoing Therapy		
Psychotherapy	50	100
CBT	-	-
Shock Treatment		
Yes	40	80
No	10	20
Gastrointestinal Symptom		
Constipation	18	36
Vomiting	6	6
Nausea	11	22

Source-Primary Data

Psychotherapeutic interventions for schizophrenia have advanced considerably, with multispectral approach ranges from met cognitive therapy, Anti-psychotic medications, and mindfulness-oriented therapies. Future research is encouraged to explore psychotherapy across three key objectives: offering emotional support, improving functional outcomes, and influencing the underlying disease mechanisms **(Dickerson et al., 2011).** In the present study, 52% of participants were prescribed Sizodon, while 30% received Pacitane, 22% were on Zapiz, 10% used Neurobion Forte, and 6% were treated with Chlorpromazine. Additionally, 50% of the respondents had undergone psychotherapy. A significant proportion—80%—reported receiving electroconvulsive (shock) therapy, whereas 20% had not undergone this treatment. Regarding gastrointestinal symptoms, 36% of the participants experienced constipation, 22% reported nausea, and 6% reported episodes of vomiting.

Figure 1 and 2



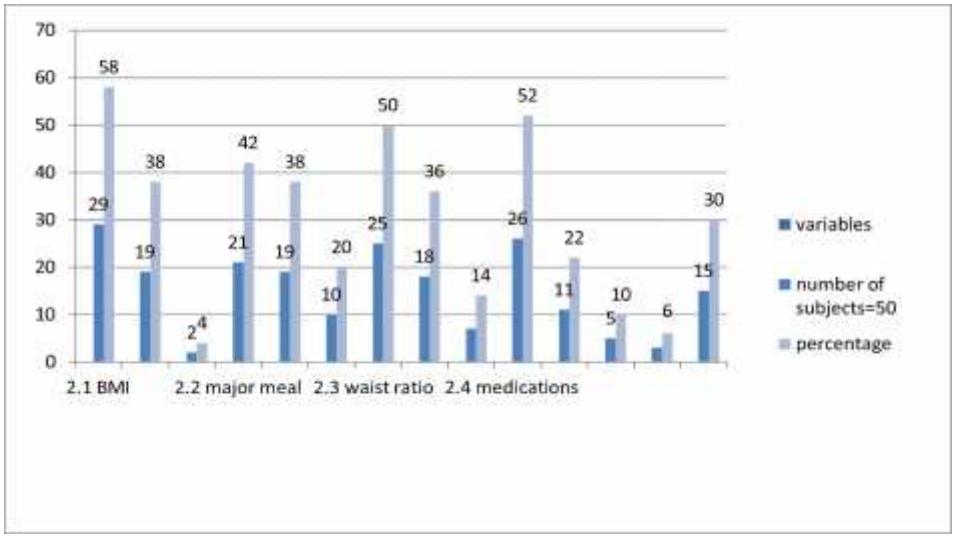


Table 5 Showing Psychological Data of the Subject

Variables	Number of Respondents=50	Percent
Isolated		
Rarely Always	19 31	38 62
Prefer Being Alone		
Yes No	34 16	68 32
Hallucinations		
Yes No	27 23	54 46
Hearing Good Or Bad Voices About Themselves		
Yes No	37 13	74 26
Hearing Secret Messages From Tv Or Radio		
Yes No	26 24	52 48

Source-Primary Data

Positive symptoms in schizophrenia represent an alteration of typical functions, including manifestations such as delusions, hallucinations, and disorganized behavior. In contrast, negative symptoms involve a reduction or loss of normal emotional and motivational processes, such as abolition, anhedonia, asociality, blunted affect, and alogia. These negative symptoms are considered a fundamental dimension of schizophrenia and significantly contribute to long-term disability and impaired functional outcomes **(Correll CU et al., 2020)**.

In the present study, 52% of the participants reported perceiving secret messages through television or radio, while 42% did not experience such symptoms. Furthermore, 74% reported hearing voices internally. Visual hallucinations were present in 54% of the respondents, whereas 46% did not report

visual perceptual disturbances. Additionally, a considerable proportion (68%) expressed a preference for isolation, indicating that solitude was perceived as a safe or comforting state for many individuals in the sample.

Table 6: Showing Sensory Behavior Data of the Subject

Variables	Number Of Respondents=50	Percent
Sensory Characteristics Influencing Food Inatke		
Colour	13	26
Flavour	10	20
Texture	10	20
Appearance	11	22
Taste	13	26
Happy Mood		
Eating More	12	56
Eating Less	22	44
Sad Mood		
Eating Less	12	24
Eating More	9	18
Skipping The Meal	29	58

Source-Primary Data

In the assessment of sensory factors influencing food choices, 26% of the participants reported being influenced by color, while 20% each were influenced by flavor and texture. Appearance influenced 22% of the respondents, and taste was a determining factor for 26%. Mood-related eating patterns revealed that during periods of happiness, 56% of the respondents consumed more food, whereas 44% ate less. In contrast, when experiencing sadness, 24% reported reduced food intake, 18% consumed more, and 58% tended to skip meals altogether.

These findings are consistent with existing literature, which shows that individuals with schizophrenia often exhibit disturbed eating behaviors, including a preference for calorie-dense foods and reduced intake of healthier options. Approximately 10% of patients experience binge eating disorder or night eating syndrome—rates significantly higher than in the general population—contributing to weight gain and metabolic complications **(Stogios N et al., 2018)**. Moreover, altered sensory processing, particularly heightened sensitivity to taste, smell, and texture, has been associated with disordered eating patterns in this population **(Escelsior A. et al., 2025).**

Table7 Showing Total Sleeping Hours and Quality of Sleep

Total Sleeping Hours		
>6hrs	26	52
6 -8hrs	18	36
>8hrs	6	12
Quality of Sleep		
Less Deep Sleep	33	66
More Shallow Sleep	17	34

Source-Primary Data

Approximately 52% of the participants reported sleeping fewer than 6 hours per night, while 36% slept between 6 and 8 hours, and 12% slept for more than 8 hours. With regard to sleep quality, 66% of the respondents experienced reduced deep sleep, whereas 34% reported predominantly shallow sleep. These findings are notable, as sleep disturbances in individuals with schizophrenia are closely linked to diminished quality of life across key domains, including physical health, psychological functioning, social interactions, and environmental well-being **(Kaskie RE et al., 2017)**.

Table 8 Showing Association between Marital Status And Isolated Category

S.No	Marital Status	%	Isolated	%	Chisquare Test
1	Married	56	Rarely	38	.010767
2	Unmarried	44	Always	62	

Significantat5%level

Table 8 indicates a significant association between marital status and the degree of isolation at the 5% level of significance. The findings suggest that married individuals who frequently experience isolation within their family environment are at an increased risk of developing schizophrenia. Evidence also shows that a supportive marital relationship can help mitigate the effects of social isolation by offering emotional companionship and a sense of connectedness **(Fulford D et al.,2023)**

Table 9 Showing Association between Waist Hip Ratio and Medications

S.No	Waisthip Ratio	%	Medications	%	Chisquare Test
1	Highrisk	50	Sizodon	52	.04767
2	Moderate	36	Zapiz	32	
3	Lowrisk	14	Pacitane	16	

Significantat5%level

Table 9 reveals a statistically significant association between waist–hip ratio and medication use at the 5% significance level. The results indicate that individuals with schizophrenia frequently present with elevated waist–hip ratios and notable weight gain, largely influenced by antipsychotic treatment. Previous studies have shown that even antipsychotic-naïve patients with schizophrenia are predisposed to overweight and obesity, and weight gain remains a common adverse effect of antipsychotic medications, affecting approximately 15%–72% of patients **(Chang SC et al., 2021).**

Table 10 Showing Association between Current On Going The Rapy And Trouble In Concentrating

S.No	Current Ongoing Therapy	%	Trouble In Concentrating	%	Chi Square Test
1	Psychotherapy	96	YES	54	.00001
2	Cbt	4	NO	46	

Significantat5%level

Table 10 indicates a highly significant association between ongoing therapy and difficulties in concentration. Individuals with schizophrenia who are currently receiving psychotherapy often exhibit pronounced challenges in maintaining attention, which may be attributed to underlying cognitive disturbances associated with the disorder.

Table11: Showing Association between Sad Mood and Sensory Characters Influencing Food Intake

S.No	Sad mood	%	Sensory characters Influencing Food Inatke	%	Chisquare Test
1	Eating More	24	Color	46	
2	Eating less	18	Texture	42	
3	Skipthe Meal	58	Flavour	12	0.00001

Significantat5%level

Table 11 reveals a mild but statistically significant association between sad mood and the sensory attributes that influence food intake. The findings indicate that individuals experiencing sadness or low mood are generally not affected by sensory cues such as taste, texture, or appearance when deciding to eat.

Table 12 Showing Association Between Happy Mood And Major Meal

S.No	Happy Mood	%	Majormeal	%	Chisquare Test
1	Eating More	56	Vegfoods	42	
2	Eating Less	44	Non- Vegfoods	58	.04767

Significant at 5% level

Table 12 demonstrates a strong and statistically significant association between happy mood and major meal consumption. The results suggest that individuals with schizophrenia tend to eat their primary meals more readily and with greater interest when experiencing positive mood states.

Summary and Conclusion

The present study was conducted among schizophrenia patients in SreeBalaji Medical College and Hospitals. The study provides a comprehensive overview of the demographic, clinical, behavioral, and social characteristics of individuals with schizophrenia. Participants covered a broad adult age range, with females slightly predominating (54%). Most participants were married (56%) and resided in nuclear families (62%), while family psychiatric history and low social interaction reflected the combined influence of genetic and environmental factors. Mood behaviors significantly affected their eating behaviors, with happy moods increasing major meal consumption and sad moods linked to meal skipping. Sleep disturbances, attention deficits, and metabolic changes are associated with psychotropic medications and ongoing therapy which further highlighted the complex challenges faced by these patients.

The findings emphasize the importance of nutrition in schizophrenia management. Patients receiving a balanced diet and structured nutritional care alongside medication showed marked improvements in both psychological and physical health. Promoting healthy eating habits, encouraging regular physical activity, and providing psychosocial support—including family counseling and social skills training—can enhance functional recovery and quality of life among them. These interventions also align with the United Nations Sustainable Development Goals (SDGs): SDG 3 - Good Health and Well-Being, by improving mental and physical health. SDG 10 - Reduced Inequalities, by addressing social

isolation and promoting inclusive care; and SDG 4 - Quality Education, through awareness and education on mental health for patients and caregivers. Overall, a holistic, multidisciplinary approach encompassing medical, nutritional, and psychosocial strategies is essential to optimize outcomes and improve the overall well-being of individuals living with schizophrenia.

Scope of the Study

This study provides valuable insights into the multifaceted nature of schizophrenia, including demographic, clinical, behavioral, and social dimensions. By examining factors such as age, gender, family history, social interaction, eating behavior, sleep patterns, and therapeutic interventions, the research offers a comprehensive understanding of how these variables influence the physical and psychological well-being of individuals with schizophrenia. The findings highlight the critical role of nutrition, sleep hygiene, and psychosocial support in managing the disorder.

The study also underscores the potential of tailored interventions, including balanced diets, physical activity, psychotherapy, and family counseling, to improve functional outcomes and quality of life. Additionally, the research contributes to public health awareness and aligns with global initiatives such as the Sustainable Development Goals, particularly SDG 3 (Good Health and Well-Being), SDG 4 (Quality Education), and SDG 10 (Reduced Inequalities). These insights provide mental health policy, clinical practice, and community-based rehabilitation programs, guiding future research and interventions for individuals living with schizophrenia.

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